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# **Worker Safety-1**

## **Construction Fire Protection and Prevention Plan**

### **Carlsbad Energy Center Project**

Prepared for  
**Carlsbad Energy Center, LLC**

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# Worker Safety 1 Construction Fire Protection and Prevention Plan

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## Project Location

The CECP site is located in the City of Carlsbad, California (Figure 1). The site address is 4600 Carlsbad Blvd, Carlsbad, California 92008. The CECP site is part of the approximately 95-acre Encina Power Station located in Township 12 South, Range 4 West, Section 7, in San Diego County. The Encina Power Station is comprised of the following Assessor Parcel Numbers (APNs): 210-01-41 (project site) and 210-01-43.

The project site is located in the central portion of the City of Carlsbad, adjacent to the Pacific Ocean and immediately west of Interstate 5. Carlsbad Boulevard (also designated as County Highway S21) and a railroad line are located west of the project site, and the Agua Hendionda Lagoon is located adjacent to the site to the north (Figure 2). The predominant land use in the vicinity of the site is mainly industrial. Residential and commercial land uses are also situated nearby.

The CECP site will ultimately consist of approximately 23 acres. The two new units (designated Units 6 and 7) will be on the northeast area of the existing Encina Power Station, between the railroad to the west and Interstate 5 to the east. The CEMS pad addressed under this CTCIP will be constructed in a bowl-shaped berm that houses three former fuel oil tanks (Figure 3). These three tanks will remain in place during the construction of the west CEMS pad. As part of the full construction of CECP, these three tanks and their associated piping and control system will be removed.

# Fire Protection

Employers will implement and execute this Fire Protection & Prevention Plan

The NRG's Encina Power Station (EPS) has an existing fire protection system in place.

This EPS fire protection system will be energized and remain active throughout the CEMS pad construction period and available to the construction contractor.

The CEMS pad construction contractor shall supplement the EPS fire protection system with adequately sized and strategically located fire extinguishers. These fire extinguisher locations will vary by construction work areas and the types of work activity (welding, cutting, cranes, forklifts, vehicles, construction offices, construction storage areas, etc.)

Likewise, good housekeeping is essential for safe construction and for fire prevention. The CEMS construction contractor shall direct site construction workers, at a minimum, to daily clear the construction work areas to assure work areas are free from waste materials or rubbish caused by construction activities. Trash and rubbish will be collected and disposed of by proper means. Work areas will be maintained in an orderly manner to promote worker safety and promote fire prevention. Work areas will be inspected regularly throughout each work day by construction safety personnel and construction supervisors to assure compliance.

## 2.1 Fire Extinguishers and General Fire Prevention Practices

Fire extinguishers shall be provided so that the travel distance from any CEMS pad construction work area (including but not limited to the CEMS pad, laydown and construction parking areas) to the nearest extinguisher is less than 100 feet (30.5 meters). When 5 gallons (19 liters) or more of a flammable or combustible liquid is being used, an extinguisher must be within 50 feet (15.2 meters).

- Extinguishers must:
  - be maintained in a fully charged and operable condition;
  - be visually inspected each month; and
  - undergo a maintenance check each year.
- The area in front of extinguishers must be kept clear.
- Post "Exit" signs over exiting doors (i.e., construction trailers, and post "Fire Extinguisher" signs over/at extinguisher locations.
- Combustible materials stored outside should be at least 10 feet (3 meters) from any building.
- Solvent waste and oily rags must be kept in a fire resistant, covered container until removed from the site.
- Keep areas neat. Housekeeping is important.

## 2.2 Dispensing of Flammable/Combustible Liquids

- Areas in which flammable or combustible liquids are dispensed in quantities greater than 5 gallons (22.7 liters) (shall be separated from other operations by at least 25 feet (7.6 meters)).
- Drainage away from storm drains or surface waters or other means of containment shall be provided to control spills.
- Adequate natural or mechanical ventilation shall be provided to maintain the concentration of flammable vapor at or below 10 percent of the lower flammable limit.
- Dispensing of flammable liquids from one container to another shall be done only when containers are electrically interconnected (bonded).
- Dispensing flammable or combustible liquids by means of air pressure on the container or portable tanks is prohibited.
- Dispensing devices and nozzles for flammable liquids shall be of an approved type.

## 2.3 Welding and Cutting

Below are the Fire Prevention controls to follow when working around or performing welding and cutting.

- Before welding or cutting is permitted, the area shall be inspected by the individual responsible for authorizing the welding or cutting operation. The authorization, preferably in the form of a written permit, shall detail precautions to be taken before work is to begin.
- Suitable fire extinguishing equipment shall be immediately available in the work area.
- Flame-resistant blankets shall be used to control sparks produced by welding and cutting operations from traveling to lower levels or adjacent surfaces.
- If the valve on a fuel-gas cylinder is found to leak around the valve stem, the valve shall be closed and the gland nut tightened. If this does not stop the leak, the cylinder is to be tagged and removed from service.
- Nothing should be placed on top of a cylinder or manifold that will damage it or interfere with the quick closing of the valve.
- Flow gages and regulators shall be inspected prior to use and removed from cylinders when not in use.
- Hoses, leads, and cables shall be not be routed through doorways and walkways unless covered, elevated, or protected from damage. Where hoses, leads, and cables pass through wall openings, adequate protection shall be provided to prevent damage.
- Flash arresters shall be installed at the torch handle.

- Arc welding electrodes shall not be struck against compressed gas cylinders to strike an arc.
- All arc welding or cutting operations shall be shielded by noncombustible or flame resistant screens to protect employees or other persons in the vicinity from the direct rays of the arc.

## 2.4 Compressed Gas Cylinders

- Cylinders being transported, moved, or stored shall have valve protection caps installed. When transported by motor vehicle, hoisted, or carried, cylinders shall be in the vertical position.
- Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials by a minimum of 20 feet (6.1 meters) or by a noncombustible barrier at least 5 feet (1.5 meters) high having a fire resistant rating of at least one half hour.
- During use, cylinders shall be kept far enough away from the actual welding and cutting operations to prevent sparks, hot slag, or flames from reaching them. When impractical, fire resistant shields shall be provided.

## 2.5 Fire Prevention

- When the potential for an explosive atmosphere exists in the immediate area of welding or cutting operations, air monitoring instruments shall be used to verify that no explosive atmosphere is present before or during welding or cutting operations.
- When welding or cutting on walls, floors, or ceilings, the same precautions shall be taken on the opposite side as for the welding or cutting side.
- Whenever openings or cracks in the floor, walls, or doorways cannot be closed, precautions shall be taken to prevent combustible materials in other areas from coming in contact with sparks.
- To prevent fire in enclosed spaces, the gas supply to the torch shall be shut off at some point outside the enclosed space whenever the torch is not in use or is left unattended.
- Drums or hollow structures that have contained toxic or flammable substances shall be filled with water or thoroughly cleaned, ventilated, and tested before welding or cutting on them.
- Before heat is applied to a drum, container, or structure, a vent or opening shall be provided to release built-up pressure during the application of heat.
- Before welding or cutting on any surface covered by a preservative coating whose flammability is unknown, a competent person shall test to determine its flammability.
- Preservative coatings shall be considered highly flammable when scrapings burn rapidly.
- When preservative coatings are determined to be highly flammable, they shall be stripped from the area to be heated.